

CLAIMS:

1. The use of one or more of smilagenin, prazerigenin, an astragaloside, tigogenin, ruscogenin, hecogenin and diosgenin in the manufacture of a medicament for the treatment of a condition characterised by a deficiency in postsynaptic membrane-bound receptor number or function.
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2. The use of smilagenin, anzurogenin D or an astragaloside in the manufacture of a medicament for the treatment of a condition characterised by a deficiency in postsynaptic membrane-bound receptor number or function.
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3. A composition for the treatment of a condition characterised by a deficiency in postsynaptic membrane-bound receptor number or function, the composition comprising at least two of sarsasapogenin, smilagenin, prazerigenin, an astragaloside, tigogenin, ruscogenin, hecogenin and diosgenin.
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4. A pharmaceutical composition having cognitive function enhancing properties which comprises a pharmacologically effective amount of a saponin or sapogenin.
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5. A pharmaceutical composition as claimed in claim 4, wherein said saponin or sapogenin is a steroid saponin or sapogenin.
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6. A pharmaceutical composition having cognitive function enhancing properties which comprises a pharmacologically effective amount of a non-oestrogenic saponin or sapogenin.
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7. A pharmaceutical composition having cognitive function enhancing properties which comprises a pharmacologically effective amount of a saponin or sapogenin derived from a plant of the genus *Smilax*, *Asparagus*,

Anemarrhena, Yucca or Agave.

8. A pharmaceutical composition having cognitive function enhancing properties which comprises an effective amount of a non-oestrogenic saponin or sapogenin derived from a plant of the genus Smilax, Asparagus,

5 Anemarrhena, Yucca or Agave.

9. The use of an extract of a plant of the genus Smilax, Asparagus, Anemarrhena, Yucca or Agave in the preparation of a medicament having cognitive function enhancing properties.

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10. A method of enhancing cognitive function which comprises administering to a human or animal an effective dosage of a composition as claimed in claim 4.

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11. A method of enhancing cognitive function in a human or non-human animal, which comprises administering an effective dose of a non-oestrogenic saponin or sapogenin.

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12. A method of enhancing cognitive function in a patient suffering from age-related cognitive dysfunction, which comprises administering to the patient a pharmacologically effective dose of a non-oestrogenic saponin or sapogenin.

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13. A method for the treatment of a condition which is characterised by a deficiency in membrane-bound receptor number or function in a tissue, organ, cell type or organelle, the method comprising:

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modulating, directly or indirectly, the action of a cytosolic, nuclear or membrane-bound protein or receptor which, when it is activated by an agonist binding thereto, or when its activity is promoted by deactivation of an antagonist thereto, upregulates and/or normalises the number and/or turnover of

membrane-bound receptors in that tissue, organ, cell type or organelle.

14. A method as claimed in claim 13, wherein said protein or receptor, when activated, increases the amount of mRNA molecules in the tissue, organ, cell type or organelle which code for membrane-bound receptors.

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15. A method as claimed in claim 13, wherein said protein or receptor, when activated, increases the production of mRNA molecules in the tissue, organ, cell type or organelle which code for membrane-bound receptors.

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16. A method as claimed in claim 13, wherein said protein or receptor, when activated, increases the transcription or expression of mRNA molecules in the tissue, organ, cell type or organelle which code for membrane-bound receptors.

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17. A method as claimed in claim 13, wherein said protein or receptor, when activated, decreases the breakdown of mRNA molecules in the tissue, organ, cell type or organelle which code for membrane-bound receptors.

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18. A method as claimed in claim 13, wherein said protein or receptor, when activated, modulates the expression of DNA in the tissue, organ, cell type or organelle which code for membrane-bound receptors.

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19. A method as claimed in claim 14, wherein the action of said protein or receptor is modulated by administering a substance which increases expression of the mRNA molecules in the tissue, organ, cell type or organelle which code for membrane-bound receptors.

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20. A method as claimed in claim 13, wherein said protein or receptor, when activated, directly or indirectly upregulates and/or normalises the number and/or turnover of muscarinic receptors in that tissue, organ, cell type or organelle.

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21. A method as claimed in claim 13, wherein said protein or receptor,

when activated, directly or indirectly normalises and/or downregulates the number and/or turnover of adrenergic receptors in that tissue, organ, cell type or organelle.

22. A method as claimed in claim 13, wherein the action of the receptor is  
5 modulated by administering a substance which is at least a partial agonist of  
nicotinic receptors.

23. A method as claimed in claim 13, wherein the action of said protein or  
10 receptor is modulated by administering a substance which is at least a partial  
agonist of the receptor.

24. A method as claimed in claim 23, wherein the agonist is a  
pharmaceutically acceptable saponin or sapogenin.

15 25. A method as claimed in claim 24, wherein the agonist is one or  
more of sarsasapogenin, smilagenin, prazerigenin, an astragaloside, tigogenin,  
hecogenin, ruscogenin and diosgenin.

20 26. A method as claimed in claim 13, wherein the receptor is located in the  
cytosol of the cells of the tissue, organ, cell type or organelle and, when activated,  
migrates to the nucleus of the cells.

25 27. A method as claimed in claim 13, wherein the receptor is located in the  
nucleus of the cells of the tissue, organ, cell type or organelle.

28. A method as claimed in claim 13, wherein the receptor is a steroid  
receptor.

30 29. A method as claimed in claim 13, wherein the receptor is an oestrogen  
receptor.

30. A method as claimed in claim 13, which is for the treatment of Alzheimer's disease or a senile dementia of the Alzheimer's type.

5        31. A method according to claim 11, wherein said saponin or sapogenin is present in a food product or beverage.

32. The use of a non-oestrogenic saponin or sapogenin in a food product or beverage to enhance cognitive function.

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